

AMENDMENTS TO THE CLAIMS

While Applicant does not agree with the obviousness rejection of claims 27 and 87, since these claims appear largely relative of claims allowed in the parent (now US Patent 6,755,837), Applicant has cancelled those claims.

Please cancel claims 27 and 87, without prejudice, amend claims 1, 70, 86, 88 and 89, and add new claims 90-127, as shown below. This listing of claims will replace all prior versions and listings of claims in the Application:

Claim 1 (currently amended): A surgical instrument for scraping bone comprising:
a generally planar unitary blade member having a first end and a second end separated by a middle section intermediate the first end and the second end of the blade, the first end having a cutting edge and an opening to allow bone shavings to pass therethrough and the middle section having at least one outwardly extending lobe;
a collection chamber for holding accumulated bone shavings having a bottom, sidewalls, and an end wall, the chamber having a upstanding retainer member for securing the at least one lobe of the blade to the collection chamber; and
an elongated handle portion coupled to the end wall of the collection chamber.

Claims 2-52 (canceled).

Claim 53 (original): A surgical instrument for scraping bone comprising:
a generally planar blade having a first end and a second end separated by a middle section, the first end having a cutting edge and an opening to allow bone shavings to pass therethrough and the middle section having at least one outwardly extending lobe, and the second end comprising a pair of cantilevered spring elements;

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a collection chamber for holding accumulated bone shavings having a bottom, sidewalls, and an end wall, the chamber having a upstanding retainer member for securing the at least one lobe of the blade to the collection chamber, and a retaining mechanism for interacting with the blade spring elements; and

an elongated handle portion coupled to the end wall of the collection chamber.

Claims 54-69 (canceled).

Claim 70 (currently amended): [[A]]An unitary blade for a bone scraping surgical instrument comprising:

a first end and a second end separated by a middle section intermediate the first end and the second end of the blade, the first end having a cutting edge and an opening to allow bone shavings to pass therethrough and the middle section having a pair of outwardly extending lobes disposed on either side of a centrally located elongated opening.

Claims 71-85 (canceled).

Claim 86 (currently amended): The surgical instrument of claim 1, characterized by one or more of the following features:

[[(a)]] wherein the elongated handle portion is flexibly secured to the end wall[[;]]

(b) wherein the collection chamber comprises a mixing area for mixing the bone shavings, blood and other constituent graft materials;

(c) wherein the collection chamber and the elongated handle portion are coupled by an area of reduced mechanical strength;

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- (d) ~~wherein the collection chamber and the elongated handle portion are coupled by a flexible or bendable joint;~~
- (e) ~~wherein the collection chamber is formed of a polymeric material or stainless steel;~~
- (f) ~~wherein the collection chamber is formed of a medical grade plastic;~~
- (g) ~~wherein the collection chamber is formed of a transparent or translucent plastic material;~~
- (h) ~~wherein the collection chamber and the elongated handle portion are coupled by an area of reduced mechanical strength which allows the cutting edge to be positioned at a range of angles relative to a longitudinal axis of the handle portion;~~
- (i) ~~wherein the blade comprises stainless steel or monocrystalline sapphire;~~
- (j) ~~wherein the blade comprises a pair of opposing lobes;~~
- (k) ~~wherein the blade comprises a pair of opposing lobes which are disposed adjacent an elongated longitudinal slot;~~
- (l) ~~wherein the middle section of the blade comprises an elongated longitudinal slot adjacent the at least one outwardly extending lobe;~~
- (m) ~~wherein the second end comprises a stop mechanism to restrict linear travel of the blade relative to the collection chamber;~~
- (n) ~~wherein the elongated handle portion is coupled to the end wall of the collection chamber through a ball and socket joint;~~
- (o) ~~wherein the second end comprises a stop mechanism for positioning the blade in the instrument;~~

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- (p) ~~wherein the second end comprises a protrusion for facilitating extraction of the blade from the collection chamber;~~
- (q) ~~wherein the second end comprises an opening through which a prying device may be inserted to facilitate extraction of the blade from the collection chamber;~~
- (r) ~~wherein the upstanding retainer mechanism comprises a first cam surface, a second cam surface and a ledge portion, wherein the ledge portion preferably helps maintain at least a portion of the blade in contact with a top surface of the collection chamber, and/or wherein the ledge portion is spaced from the top surface approximately the thickness of the blade;~~
- (s) ~~wherein the side walls of the collection chamber support the first end of the blade in the instrument;~~
- (t) ~~wherein the collection chamber further comprises a stabilizing members to restrict rotational movement of the blade in the instrument;~~
- (u) ~~wherein the upstanding retainer mechanism comprises a first cam surface, a second cam surface and a ledge portion, and the first cam surface applies a first compressive force on the at least one lobe when a second compressive force is applied to the second end of the blade, wherein the first compressive force preferably urges the at least one lobe to be displaced toward a centerline of the blade, and the blade preferably comprises an elongated slot along the centerline and the at least one lobe extends into the slot when the first compressive force is applied; and~~
- (v) ~~wherein the blade includes a pair of cantilevered spring elements adjacent its proximal end, wherein the cantilevered spring elements preferably form tension cam surfaces~~

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~~for engaging with a follower pin on the collection chamber, and wherein the follower pin preferably is formed of a material harder than the blade material.~~

Claim 87 (cancelled).

Claim 88 (currently amended): The surgical instrument of claim 53, characterized by one or more of the following features:

[(a)] wherein the elongated handle portion is flexibly secured to the end wall[;]

(b) ~~wherein the collection chamber comprises a mixing area for mixing the bone shavings, blood and other constituent graft materials;~~

(c) ~~wherein the collection chamber and the elongated handle portion are coupled by an area of reduced mechanical strength;~~

(d) ~~wherein the collection chamber and the elongated handle portion are coupled by a flexible or bendable joint.~~

(e) ~~wherein the collection chamber is formed of a polymeric material or stainless steel;~~

(f) ~~wherein the polymeric material is formed of a medical grade plastic;~~

(g) ~~wherein the collection chamber is formed of a transparent or translucent plastic material.~~

(h) ~~wherein the collection chamber and the elongated handle portion are coupled by an area of reduced mechanical strength which allows the cutting edge to be positioned at a range of angles relative to a longitudinal axis of the handle portion;~~

(i) ~~wherein the blade is formed of stainless steel or monocrystalline sapphire;~~

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- (j) wherein the middle section of the blade comprises a pair of opposing lobes;
- (k) wherein the blade comprises a pair of opposing lobes which are disposed adjacent a pair of hold-down tabs formed on the collection chamber;
- (l) wherein the elongated handle portion is coupled to the end wall of the collection chamber through a ball and socket joint;
- (m) wherein the second end comprises a stop mechanism for positioning the blade in the instrument;
- (n) wherein the second end comprises a sloped surface for facilitating extraction of the blade from the collection chamber by means of a prying device;
- (o) wherein the retainer mechanism comprises a pin;
- (p) wherein the side walls of the collection chamber support the first end of the blade in the instrument; and
- (q) wherein the blade includes a pair of cantilevered spring elements adjacent its proximal end; wherein the cantilevered spring elements preferably form tension cam surfaces for engaging with a follower pin on the collection chamber, and wherein the follower pin preferably is formed of a material harder than the blade material.

Claim 89 (currently amended): The blade of claim 70, characterized by one or more of the following features:

- [(a)] wherein the second end has a stop mechanism to limit linear travel of the blade when coupled to a cooperating collection chamber[;]
- (b) wherein the second end has a protrusion for facilitating extraction of the blade from a cooperating collection chamber;

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- (e) ~~wherein the second end has an opening through which a prying instrument can be inserted to facilitate extraction of the blade from a cooperating collection chamber;~~
- (d) ~~wherein the secured end comprises a pair of cantilevered spring elements;~~
- (e) ~~wherein the secured end includes indicia for indicating correct orientation of the blade, and~~
- (f) ~~wherein the secured end includes a notch on one side of the blade for indicating correct orientation of the blade.~~

Claim 90 (new): The surgical instrument of claim 1, wherein the collection chamber comprises a mixing area for mixing the bone shavings, blood and other constituent graft materials.

Claim 91 (new): The surgical instrument of claim 1, wherein the collection chamber and the elongated handle portion are coupled by a bridge of reduced mechanical strength.

Claim 92 (new): The surgical instrument of claim 1, wherein the collection chamber and the elongated handle portion are coupled by a flexible or bendable joint.

Claim 93 (new): The surgical instrument of claim 1, wherein the collection chamber is formed of a polymeric material or stainless steel.

Claim 94 (new): The surgical instrument of claim 1, wherein the collection chamber is formed of a medical grade plastic.

Claim 95 (new): The surgical instrument of claim 1, wherein the collection chamber is formed of a transparent or translucent plastic material.

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Claim 96 (new): The surgical instrument of claim 1, wherein the collection chamber and the elongated handle portion are coupled by a bridge of reduced mechanical strength which allows the cutting edge to be positioned at a range of angles relative to a longitudinal axis of the handle portion.

Claim 97 (new): The surgical instrument of claim 1, wherein the blade comprises stainless steel or monocrystalline sapphire.

Claim 98 (new): The surgical instrument of claim 1, wherein the blade includes a pair of opposing lobes.

Claim 99 (new): The surgical instrument of claim 1, wherein the blade includes a pair of opposing lobes which are disposed adjacent an elongated longitudinal slot.

Claim 100 (new): The surgical instrument of claim 1, wherein the middle section of the blade includes an elongated longitudinal slot adjacent the at least one outwardly extending lobe.

Claim 101 (new): The surgical instrument of claim 1, wherein the second end includes a stop mechanism to restrict linear travel of the blade relative to the collection chamber.

Claim 102 (new): The surgical instrument of claim 1, wherein the elongated handle portion is coupled to the end wall of the collection chamber through a ball and socket joint.

Claim 103 (new): The surgical instrument of claim 1, wherein the second end includes a stop mechanism for positioning the blade in the instrument.

Claim 104 (new): The surgical instrument of claim 1, wherein the second end includes a protrusion for facilitating extraction of the blade from the collection chamber.

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Claim 105 (new): The surgical instrument of claim 1, wherein the second end includes an opening through which a prying device may be inserted to facilitate extraction of the blade from the collection chamber.

Claim 106 (new): The surgical instrument of claim 1, wherein the upstanding retainer mechanism includes a first cam surface, a second cam surface and a ledge portion, wherein the ledge portion help to maintain at least a portion of the blade in contact with a top surface of the collection chamber.

Claim 107 (new): The surgical instrument of claim 1, wherein the ledge portion is spaced from the top surface approximately the thickness of the blade.

Claim 108 (new): The surgical instrument of claim 1, wherein the side walls of the collection chamber support the first end of the blade in the instrument.

Claim 109 (new): The surgical instrument of claim 1, wherein the collection chamber further includes a stabilizing member to restrict rotational movement of the blade in the instrument.

Claim 110 (new): The surgical instrument of claim 1, wherein the upstanding retainer mechanism comprises a first cam surface, a second cam surface and a ledge portion, and the first cam surface applies a first compressive force on the at least one lobe when a second compressive force is applied to the second end of the blade, wherein the first compressive force urges the at least one lobe to be displaced toward a centerline of the blade, and the blade comprises an elongated slot along the centerline and the at least one lobe extends into the slot when the first compressive force is applied.

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Claim 111 (new): The surgical instrument of claim 1, wherein the blade includes a pair of cantilevered spring elements adjacent its proximal end, wherein the cantilevered spring elements form tension cam surfaces for engaging with a follower pin on the collection chamber, and wherein the follower pin is formed of a material harder than the blade material.

Claim 112 (new): The surgical instrument of claim 53, wherein the collection chamber comprises a mixing area for mixing the bone shavings, blood and other constituent graft materials.

Claim 113 (new): The surgical instrument of claim 53, wherein the collection chamber and the elongated handle portion are coupled by a bridge of reduced mechanical strength.

Claim 114 (new): The surgical instrument of claim 53, wherein the collection chamber and the elongated handle portion are coupled by a flexible or bendable joint.

Claim 115 (new): The surgical instrument of claim 53, wherein the collection chamber is formed of a polymeric material or stainless steel.

Claim 116 (new): The surgical instrument of claim 53, wherein the collection chamber is formed of a medical grade plastic.

Claim 117 (new): The surgical instrument of claim 53, wherein the collection chamber is formed of a transparent or translucent plastic material.

Claim 118 (new): The surgical instrument of claim 53, wherein the collection chamber and the elongated handle portion are coupled by a bridge of reduced mechanical strength which allows the cutting edge to be positioned at a range of angles relative to a longitudinal axis of the handle portion.

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Claim 119 (new): The surgical instrument of claim 53, wherein the blade is formed of a stainless steel or monocrystalline sapphire.

Claim 120 (new): The surgical instrument of claim 53, wherein the middle section of the blade includes a pair of opposing lobes.

Claim 121 (new): The surgical instrument of claim 53, wherein the blade includes a pair of opposing lobes which are disposed adjacent a pair of hold-down tabs formed on the collection chamber.

Claim 122 (new): The surgical instrument of claim 53, wherein the elongated handle portion is coupled to the end wall of the collection chamber through a ball and socket joint.

Claim 123 (new): The surgical instrument of claim 53, wherein the second end includes a stop mechanism for positioning the blade in the instrument.

Claim 124 (new): The surgical instrument of claim 53, wherein the second end includes a sloped surface for facilitating extraction of the blade from the collection chamber by means of a prying device.

Claim 125 (new): The surgical instrument of claim 53, wherein the retainer mechanism comprises a pin.

Claim 126 (new): The surgical instrument of claim 53, wherein the side walls of the collection chamber support the first end of the blade in the instrument.

Claim 127 (new): The surgical instrument of claim 53, wherein the blade includes a pair of cantilevered spring elements adjacent its proximal end; wherein the cantilevered spring

elements form tension cam surfaces for engaging with a follower pin on the collection chamber, and wherein the follower pin is formed of a material harder than the blade material.

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